US ERA ARCHIVE DOCUMENT

IRB PERFORMANCE REVIEW

200.0 Introduction

The submission contains data to demonstrate that Permethrin 3.2% E.C. will control fleas and ticks on dogs when applied as a dip or sponge treatment at a .05% concentration (2oz. product/gal. water). Proposed claims are for long protection against reinfestation with reapplications at 2-3 weeks.

201.0 Data Summary

Three reports are included. Report No. 1 is a study conducted by F. W. Knapp, Consulting Entomologist, in Louisville, Kentucky. Report Nos. 2 and 3 are studies conducted by Ag. Research Consultants of Greenbrier, AR.

In Report No. 1, 50 fleas and 50 brown dog ticks/animal were used to infest dogs of various breeds, sizes and hair coats. Application was by sponge dipping. Infestation was at 3 days pre-treatment and at 7, 14 and 21 days post-treatment. The .05% and .1% concentrations of Permethrin 3.2 EC were tested (6 dogs/ treatment). Results are summarized as follows.

Fleas

Treatment			Hours			Days							
			0	2	1	2	7	9	14	16	21	23	28
	•05%	Mean No.											
	Permethrin	Fleas	21.7	0	0	0	50	0	50	1.2	50	5.7	4
		Mean %											
		Control		100	100	100		98.9		83.1		83.3	81.3
	.1%	Mean No.											
	Permethrin	Fleas	29.9	0	0	0	50	0.5	50	5.5	50	5.0	35
		Mean %											
		Control		100	100	100		98.9		83.1		83.3	81.3
	Untreated	Mean No.											
	Check	Fleas	31.5	29	24.2	29.2	50	46	50	32.5	50	30	20.3
•													
						Ticks							
	Treatment				Hou	rs				Days			
			0	2	1	2	7	9	14	16	21	23	28
	• 05%	Mean No.									*		
	Permethrin	Ticks	23.5	18.5	14.2	0	50	0	50	1	50	3.5	3.0
		Mean %											
		Control		20.3	28.3	100		100		96.2		84	88.1
	•1 %	Mean No.											
	Permethrin	Ticks	27.7	24.5	16.5	0	50	0.8	50	1	50	27	1.8
		Mean %											
		Control		0	27	100		96.5		96.2		89.7	92.9
	Untreated	Mean No.											
	ourreared												
	Check	Ticks	25	23.2	23	23.7	50	23.2	50	26.3	50	23.8	25.2

In Report No. 2, 100 cat fleas and 50 brown dog ticks/animal were used to infest dogs of various breeds, sizes, and hair coats. Application was by sponging. Infestation was at 3 days pre-treatment and at 4, 11 and 18 days post-treatment. The .05% concentration of Permethrin 3.2 EC was tested, along with a formulation of Malathion and Lindane (.24% and .03% concentration). There were five dogs/treatment. Results are summarized as follows.

		Fleas				
Treatment		-1 Day	4 Hr.	7 Days	14 Days	21 Days
.05% Permethrin	Total No. Fleas % Control	97	0 100	4 98	23 88	93 70
•24% Malathion + 0.3% Lindane	Total No. Fleas % Control	77	0 100	0 100	0 100	3 99
Untreated	Total No. Fleas	137	152	220	185	312
		Ticks				
Treatment		-1 Da	y 4 Hr.	7 Days	14 Days	21 Days
.05% Permethrin	Total No. Ticks % Control	59	5 97	7 95	14 87	9 91
.24% Malathion + 0.3% Lindane	Total No. Ticks % Control	90	0 100	5 97	16 85	59 4 0

In Report No. 3, 100 cat fleas as well as 50 American dog ticks and 50 brown dog ticks were used to infest dogs of various breeds, sizes and hair coats. Infestation for fleas was at 3 days pre-treatment and 3, 11 and 18 days post-treatment. Infestation for ticks was at 3 days pre-treatment and 2, 11, and 18 days post-treatment. The .05% concentration of Permethrin 3.2 EC was tested with 8 dogs. A pyrethrins shampoo was included as a standard and was tested with 6 dogs. Results are summarized as follows.

122

198

154

109

99

Total No. Ticks

Untreated

Fleas

				Days		
Treatment		-3	1	5	14	21
.05% Permethrin	Total No. Fleas % Control	170	2 98•5	33 91.7	184 53•5	346 20.3
.05% Pyrethrins Shampoo	Total No. Fleas % Control	138	2 97•9	224 24•6	199 33	26 4 19
Untreated	Total No. Fleas	112	97	297	297	326

Brown Dog Tick

					Days		
Treatment			-3	1	5	14	21
.05% Permethrin	Total No.	Ticks	139	22	2	19	53
	% Control			91.9	99•1	92.2	77.7
.05% Pyrethrins	Total No.		42	38	25	43	
Shampoo	% Control			62.7	69.9	53	
Untreated	Total No.	Ticks	115	204	166	183	178
		Americ	an Dog T	'ick			
					Days		
Treatment			-3	1	5	14	21
.05% Permethrin	Total No.	Ticks	165	35	9	74	113
	% Control			83.2	96•2	57.6	59•1
.05% Pyrethrins	Total No.	Ticks	57	78	57	70	
Shampoo	% Control			0	36	0	

202.0 Conclusions

Untreated

In Report No. 1, results for the .05% concentration of Permethrin indicated 94.8% flea control through 9 days with 83.1%, 83.3%, and 81.3% control at 16, 23, and 28 days. For ticks there was low control at 2 hrs. (20.3%) and 1 day (28.3%) with 100% control at 2 and 7 days, 96.2% control at 16 days, 84% control at 23 days and 88.1% control at 28 days.

121

156

178

131

207

In Report No. 2, results for the .05% concentration of Permethrin indicated good flea control (98% at 7 days and 88% at 14 days) through 14 days with 70% control at 21 days. For ticks, control was high through 21 days (91% at 21 days).

In Report No. 3, results for the .05% concentration of Permethrin indicated flea control of 98.5% and 91.7% at 1 and 5 days with 53.5% and 20.3% control at 14 and 21 days. For brown dog ticks, control was high through 14 days (92.2% at 14 days) with 77.7% control at 21 days. For American dog ticks, control was 83.2% and 96.2% at 1 and 5 days with 57.6% and 59.1% control at 14 and 21 days.

The data support claims for flea and tick control. The label should indicate that residual activity may be from 1-3 weeks for fleas, 2-3 weeks for brown dog ticks and maybe less than one week for American dog ticks.

R. S. Van Denburgh 10-29-81

Total No. Ticks

IRB PERFORMANCE REVIEW

9-10-81 10-29-8(
IN OUT

FILE OR REG. NO. 59-ROL
PETITION, EXP. PERMIT, S. 18, 24c, NO
DATE OF SUBMISSION 7-1-81
DATE DIV. RECEIVED 7-1-81
TYPE PRODUCTS(S): (I,) D, H, F, N, R, S
DATA ACCESSION NO(S). 245583
PRODUCT MGR. NO. 17
PRODUCT NAME(S) Permethrin 3.2% EC
COMPANY NAME Burroughs Wellcome Co.
SUBMISSION PURPOSE Registration
CHEMICAL & FORMULATION Permethrin EC

200.0-Introduction - The submission Contains data to demonstrate that Permethria 3.2% E.C. will control fleas and ticks on dogs when applied as a dip or sponge treatment at a .05% Concentration [22 phoduct/ gal. water]. Proposed claims are for long protection against reinfestation with reapplications at 2-3 weeks.

201.0 - Data Summary - Three reports are included.

Report No.1 is a Study Conducted by F.W. Knapp,

Consulting Entomologist, in Louisville, Ky. Report Nos 2+3

are Studies Conducted by Ag Research Consultants

of Green brien, Ark.

In Report No.1, 50 fleas and 50 brown duy ticks/
animal were used to infest duys of various breeds, sizes
and hair coats. Application was by sponge dipping.

Infestation was at 3 days pre-theatment and at
7, 14 and 21 days post-treatment. The .os? and
.17. (oncentrations of Permethnia 3.2 Ec were
tested (6 duys / treatment). Results ave

Summanized as follows.

Fleus 16 21 23 Treatment 14 21 Mean No. Fles 21.7 80 1.2 50 .057. Permethrin 0 O 0 50 0 Mean To Contal 100 - 989 - 83.1 - 87.3 ટા lou lug 0 50 0.5 50 5.5 50 5.0 33 ပ .17, Serme-thing Mean No. Flees 29.9 0 81, luu 100 - 989 -83.1 — 83.3 Mean 7. (untral - 100 Mean No. Flees . 31.5 29 24.2 29.2 50 46 50 325 50 30 Un theate & Check 20

TICKS 7 9 14 16 21 23 29 7 Į Theature T 1 50 3.5 3.c 500 20 23.5 18.5 14:2 0 105 To Permethoni MIAN No. TICKS - lus - 962 - 84 88.1 28.3 100 20.3 Mega To Courtel 50 27 1.8 Meun No. Ticks 27.7 24.5 16.5 0 50 .8 50 - 190 Permethon - 965 - 96.2 - 89.7 92,9 27 [00 0 Mean To Conter! un treate d Man Nu. Ticks 25 232 23 23.7 50 232 50 263 50 23.8 25.7 check

In Report No. 2, 100 cat fleas and 50 blown dog Ticks/
animal more used to infest dogs of various broads, 512es,
and hair Coats. Application was by sponging. Infestation
was at 3 days pre-treatment and at 4, 11 and 18 days
post theatment. The os 70 concentration of Permethria
3.2 Ec has tessed, along with a formulation of Malathout
Lindana (.2470 t.0370 concentration). There were five
dogs/treatment. Results are summarized as follows.

		Fleas				
Theatenest		-/ Vay	4 HW.	7 Days	14 Days	21 Days
057. Bromethoin	Total Mufles	97	Ø	4	23	93
	7. Contibul		luo	99	68	70
. 247 - Malethia +037 Lindons	Total No.Flear	<u>ئەر</u>	O	•	0	3
, , , , , , , , , , , , , , , , , , , ,	Yulonthol		100	100	100	47
unthorted	Total Ala Flogs	137	152	120	185	312
theatment		Ticks	4445	70ms	14 Days	کا 4 ۹ 4
-25 % Paraudini	To tail No Ticks	24 Day	5	7	14	9
, w	7. Continol	- (77	95	87	91
,241. Malathui 4.032Lındana	Total Muticks	90	0	5	16	29
A. 103 Gri allianor	To Conctinuit	-	loo	97	85	40
vn-thla-ted	TotalNuTicks	122	198	154	109	17

In Report No. 3, 100 cat fless as well as so American dog ticks and so brown dog ticks were used to infest dogs of various breeds, sizes and hair coats. In festation for fleas was at 3days pre-treatment and 3, 11 and 18 days point theatment. Infestation for ticks was at 3days pre-treatment and 2, 11, and 18 days post theatment. They us 7. Concentration of with 80095 Permethning. ZEC was tesseld. A pyrethnins shampoo was included as a standard and was tested with 6 dogs. Results are summarized as follows.

	1	Fleas				
Theatman + . os 2 Permethoin	Total No Flags Pulantrol	- 3 170	298.5	5 33 917	14 184 53,5	21 346 203
.os 2. Altethrius	Tota 1 Nu. Fleas Ya Country 1	138	7.9 2.9	224 24.6	199 33	764 19
Untreated	Total NaFley	112	77	297	54 4	326
	Brow	~~ Da 9	Tick			
Treatment 1057. Permethin	Total Noticks	-3 139	91.9	5 2 99.1	14 19 72.2	24 53 77.7
Shampou	Total No Ticks To Control	42	38 627 204	25 69.9 166	43 53 183	178
untreated	Total HoTicks	11 5	'	. •	•	

	American	D-9-	Tick			
treateurt. us 2 Permethrin	Total No TKKS	-3 165	35	7 7	14 74	71
	4. Courtes		83.2	96.2	57.4	59.1
oslo Ryte-throng Shampou	Total Nutidu	57	78	57	70	
Mamban	Ya Con-thul		0	36	0	
64 treated	Total No. Ticks	121	156	178	131	207

202.0 - Conclusions. In Treport No.1, results for the is 5 % Concentration of Permethrin in dicated 94.8% of Pea Control of them 9 days with 831%, 83.3% and 81.3% Control of 16,23, and 28 days. For ticks them has low control of 2hrs (20.3%) and 1 day (28.3%) with 90.0% Control of 2017, control of 100% with 90.0% Control of 2017, control of 100% but the control of 2017, control of 28 days, 84% control of 23 days, and 88.1% Control of 28 days,

In Report NO. 2 results for the .05% concentration of Permetherin Indicated 700d flea control (98% at 7days and 88% at 14 days) thru 14 days with 70% control at 21 days. For ticks, control was high thru 21 days (91% at 21 days). In Report NO3, results for the .05% parametricing

In Report NO3, results for the .05? permething of Permethin indicated flea control of 98.5 % and 91.76 at land 5 days with 53.5% and 20.3% Control at 14 and 21 days. For brown dog ticks (ontrol was high thru 14days (92.2% at 14days) with 77.7% Control at 21days, For Amarican dog ticks Control was 83.2% and 96.2% at lands days with 57.6% and 59.1% Control at 14and 21 days.

The data support claims for fleer and tick control. The label should indicate that residual activity may be from 1-3 weeks for fleas, 2-3 weeks for brown dog ticks and may be less than one meek for American dog ticks.

R. J. Van Denburgh 10-29-81

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